NEW CHILOPODS.

BY RALPH V. CHAMBERLIN.

Lithobius centurio sp. nov

Dorsum dark brown, the principal scuta darkened along posterior border and along middle; head a little lighter, darkened over middle caudally; antennæ light brown; legs mostly yellowish, the posterior pairs becoming darker, brown; posterior portion of venter darkest, all the scuta excepting the most anterior with a paler central circular area.

Body much narrowed anteriorly.

Posterior angles of the 9th, 11th and 13th dorsal plates produced.

Antennæ of moderate length; articles 19–22, the distal ones, excepting the ultimate, reduced.

Ocelli 22, arranged in 5 series (2, 5, 6, 6, 1+2).

Presternal teeth 2–2.

Coxæ of last two pairs of legs armed dorsally and also dorso-laterally at the furrow, which is more dorsal in position than usual. Anal legs with claw unarmed; spines 1, 3, 2, 1. Claw of penult legs armed with a single spine; spines 1, 3, 3, 1. Spines of first legs 2, 3, 2.

Coxal pores small, round, 3, 3, 3, 3.

In the male the femur of the anal legs is abruptly produced into a lobe at its distal end above, and the tibiæ is produced into a larger lobe at its proximal end above adjacent to the femoral lobe, the lobe being truncate above and somewhat bent distally. The penult legs have the tibia produced into a moderate lobe at its distal end.

Length 14 mm.; width of 10th dorsal plate 2.6 mm.

Locality.—Las Vegas, New Mexico (Prof. T. D. A. Cockerell).

One male.

Lithobius cockerelli sp. nov.

Brown to chestnut, head darkest, some dorsal scuta in one specimen with the posterior margin lined with dark and with a dark stripe along middle; antennæ concolorous with head or but little paler; legs light brown.

Angles of none of the dorsal plates produced.

Antennæ moderately long, articles 28–29, in length long and moderate.

Ocelli 15, arranged in 4 series (5, 1+4, 3, 2).

Presternal teeth 2–2, obtuse, those of each side close together and toward middle.

Three posterior pairs of coxæ armed laterally with a stout spine, unarmed beneath. Anal legs with claw unarmed; spines 1, 3, 3, 1. Penult legs with claw armed with two spines; spines 1, 3, 3, 2–1, 3, 3, 3. Spines of first legs 2, 3, 2.

Coxal pores small, round, 4, 5, 5, 5.

Claw of female gonopods entire, acute, short; basal spines 2–2, the inner shortest.

Length 22 mm.; width of 10th plate 2.6 mm.

Locality.—New Mexico (Prof. T. D. A. Cockerell).

Lithobius fungiferopes sp. nov.

Dark purple-brown, head darkest, almost black; antennæ rufous distally; legs light purple-brown proximally, yellow distally.

Posterior angles of 9th, 11th and 13th dorsal plates produced.

Antennæ short; articles 20, mostly short.

Presternal teeth 2–2.

Posterior coxæ unarmed. Anal legs with claw armed with a spine; spines 1, 1, 0, 0! Penult legs with claw armed with one spine; spines 1, 1, 0, 0. Spines of first legs 0, 0, 0!

Claw of female gonopods wide, short, tripartite; basal spines stout, acute, subequal.

Anal and penult legs of male strongly swollen; none of the joints of anal legs produced into lobes, but the fifth joint of the penult legs bearing at its distal end above a peculiar pilose process which is rounded distally and constricted at base, fungiform.

Length 5–6 mm.

Locality.—Ithaca, New York.

Not uncommon under fallen leaves in woods.

Lithobius euthus sp. nov.

Brown, the first and the last dorsal scuta darker, reddish; head reddish brown; antennæ brown to reddish brown, paler distally.

Angles of 11th and 13th dorsal plates produced in adults or sometimes nearly straight, this character being evidently variable in this form.

Antennæ short (5.4 mm.); articles 25–28, moderate.

Ocelli 8 in 3 series.

Presternal teeth 2–2.

Posterior coxæ unarmed either ventrally or laterally. Anal legs with claw armed with a single spine; spines 1, 3, 2, 0. Penult legs with

claw armed with a single spine; spines 1, 3, 3, 2. Spines of first legs 1, 2, 1–1, 1, 1.

Coxal pores small, round, 4(5), 4, 4, 4.

Claw of female gonopods entire, long and acute; basal spines conically acuminate, the inner shorter.

Length 15 mm.; width 2 mm.

Locality.—Austin, Texas (Prof. J. H. Comstock).

Lithobius navigans sp. nov.

Reddish to purplish brown, the middle plates lightest; head yellow; antennæ dark brown basally, becoming yellow distally; presternum and legs yellow; venter yellowish, the first and the last plates darker.

None of the dorsal plates with posterior angles produced.

Antennæ short (2 mm.); articles 28 or 29, short.

Ocelli 12 in 3 series (5, 1+5, 1).

Presternal teeth 2–2, small.

Posterior coxæ unarmed beneath or laterally. Anal legs with claw armed with a single spine; spines 1, 3, 3, 1. Spines of penult legs 1, 3, 3, 1. Spines of first legs 0, 1, 1.

Coxal pores 2, 3, 3, 2–3, 4, 4, 4, small, round.

Claw of female gonopods tripartite, lobes acute, the middle longest; basal spines 2–2, short, equal, a little clavately thickened upward and then conically pointed.

Length 7 mm. (♂)–7.5 mm. (♀).

Locality.—Bermudas (Prof. J. H. Comstock).

Several specimens, ♂ and ♀. It is related to the European species *lapidicola* Mein., but is sufficiently distinct to warrant separation. In the same collection were specimens of *Lithobius provocator* Poc., *Mecistocephalus guildingii* Newp., and *Julus moreleti* Lucas, all previously reported from this locality.

Pectiniunguis montereus sp. nov.

Very similar in general appearance and structure to *P. americanus* Boll., but readily separated from this as also from the other two previously described species by the fact that the anal legs are each armed with a large claw. In *plusiodontus* Att. there is a mere vestige of a claw, while in the other species there is no trace of one.

The known species of this genus may be separated by means of the following key:

a.—Prebasal plate exposed.

a'.—Anal legs armed with a claw, ... *montereus* sp. nov.

b'.—Anal legs unarmed, ... *americanus* Boll.

b.—Prebasal plate not exposed.

a'.—Ventral pores not existing on segments beyond the 28th; pleural pores absent, ... *europæus* Attems.

b'.—Ventral pores on all plates from the first to the penult; pleural pores present, ... *plusiodontus* Attems.

The specimens of *montereus* examined are, in alcohol, light brown anteriorly and pale yellow posteriorly, the head being brown with the frontal region lighter. The color seems to have faded in the alcohol and in life was probably reddish.

The two individuals have respectively 59 and 61 pairs of legs. They are very gradually though conspicuously attenuated anteriorly, and strongly and rapidly attenuated posteriorly.

The cephalic plate is longer than wide (6.4: 5.8); sides nearly straight and but slightly converging caudad; the posterior angles well rounded; posterior border truncate, not mesally at all incurved.

Antennæ moderate, the ultimate article distinctly shorter than the two preceding together (1.5 : 2).

Ventral pores and last ventral plate nearly as in *americanus*.

Length of larger specimen 48 mm.

Locality.—Pacific Grove, Bay of Monterey, California.

Geophilus regnans sp. nov.

Light brown, paler posteriorly. Body wide anteriorly, attenuated gradually posteriorly.

Head large.

Cephalic plate attenuated in front of middle; anterior border broadly triangular; sides behind straight and subparallel; posterior margin wide, a little incurved mesally. Frontal plate coalesced. Prebasal plate exposed at the middle, the basal plate being a little covered by the cephalic laterally. Basal plate thrice wider than long.

Claws of prehensorial feet when closed not attaining the front margin of head; presternum in front widely angularly emarginate, unarmed; all joints and the claw unarmed.

Antennæ very short, subsparsely pilose; the ultimate article about equalling in length the two preceding together.

Sulci of dorsal scuta not deep.

Anterior spiracles oval, oblique, the first few large, the others gradually decreasing; median and posterior spiracles circular, small.

Last ventral plate very wide, its sides convexly curving, moderately converging posteriorly; posterior margin wide, gently incurved. Last pleuræ moderate in size; pores entirely covered by the ventral plate, few, small.

Anal legs stouter and much longer than the penult, armed with a long, stout claw; like the other legs, almost destitute of hair.

Pairs of legs 79–81.

Locality.—Southern California (Los Angeles, etc.).

I am inclined to think this species the *Strigamia cephalica* of Wood. But it is really a *Geophilus*, and a new name must under any conditions be given to it, as the name *cephalicus* was previously given by Wood to another species in this genus.

Geophilus cayugæ sp. nov.

Body little attenuated anteriorly, strongly attenuated posteriorly.

Cephalic plate with anterior and posterior margins truncate; angles well rounded; sides nearly straight, subparallel; longer than wide (7.4 : 6.7). Frontal plate not distinctly separated. Basal plate two and a half times wider than long.

Claws of prehensorial feet when closed barely reaching the front margin of head; presternum with chitinous lines, front margin widely angularly emarginate, unarmed; femur and claw also unarmed.

First two spiracles large, subcircular, those following circular, gradually decreasing in size caudad, the last very small.

Last ventral plate rather narrow; sides straight, converging posteriorly. Last coxæ enlarged, covered over entire exposed surface, except posteriorly, with large and small pores, of which there are 30 or more on each side.

Anal pores distinct, of moderate size.

First pair of legs much smaller and more slender than those following, the second pair somewhat intermediate in size. Anal legs stouter and much longer than the penult, each armed with a very long and slender claw.

Pairs of legs 65 (♀). Length 55 mm.

Locality.—Ithaca, New York.

Evidently close to *lanius* Bröl. In *cayugæ*, however, the anal pores are conspicuous, not concealed (absent?) as in *lanius*. Also the antennæ are relatively much shorter than in *lanius*, the cephalic plate is of a different shape, the number of pleural pores is much larger and cover the pleuræ above as well as below and laterally, and the pairs of legs number 65 (♀) as against 57 (♀) in *lanius*.

Mecistocephalus anomalus sp. nov.

Body and legs waxy yellow; head pale, somewhat reddish brown; antennæ pale yellowish brown.

Gradually attenuated from the head caudally.

Cephalic plate longer than wide in ratio of 7 : 4.75; strongly nar-

rowed caudally, posterior margin truncate. Basal plate moderately narrowed, wider anteriorly than long in ratio of 3 : 2; pleuræ exposed in usual manner.

Antennæ not attenuated distally, all articles excepting ultimate obconic; ultimate article a little shorter than the two preceding together; length 3.2 mm.

Claws of prehensorial feet when closed reaching but slightly beyond front margin of head; presternal teeth pale, obtuse; median furrow of presternum wide, shallow, not well marked posteriorly; femora with a stout, blunt black tooth, the next two joints with small, black tubercle-like teeth, the claws with an acute tooth.

Anterior præscuta short but all distinctly exposed, the median and posterior ones long. A number of anterior dorsal scuta with a distinct median sulcus between the two lateral sulci.

The anterior ventral scuta with a deep median sulcus which does not attain the margin.

Anterior spiracle large, oval, subvertical, the second and third of similar form but smaller, those following circular, rapidly decreasing in size, those of the middle and posterior region being very small.

Last ventral plate wide, strongly narrowed caudally, the sides straight. Last pleuræ inflated, having along the edge of the ventral plate on each side a row of 4 or 5 very small pores and at a distance on middle part a clearly larger isolated single pore.

Anal pore moderate.

First pair of legs much shorter and more slender than the second. Anal legs stouter and much longer than the penult pair.

Pairs of legs 41(!). Length 22 mm.; width 1 mm.

Locality.—Pacific Grove, California.

One male.

This species cannot well be identified with the *M. limatus* of Wood, which is apparently a much larger form. Aside from other minor differences more or less uncertainly indicated by Wood's description, the number of legs of *limatus* is given as "43–44," indicating that several specimens were examined. The number 44 is, of course, an error; but it is practically certain that the number of pairs of legs, which so far as known is absolutely fixed for each species in this genus, was 43, and not the unusual number 41.

Linotænia rubelliana sp. nov.

Color in life bright red, fading in alcohol to a uniform brown, the antennæ alone remaining somewhat brighter.

Cephalic plate narrowed anteriorly, in front subnarrowly rounded,

behind widely truncate. Frontal plate clearly separated. Prebasal plate well exposed. Basal plate twice wider than long, with no indication of a median furrow.

Antennæ short, attenuated distally, the ultimate joint little shorter than the two preceding together; all articles sparsely hirsute with short fine hairs.

Claws of prehensorial feet when closed falling much short of the front of the head; femora unarmed; tooth of claw large, acute; front margin of presternum deeply excavated.

All ventral scuta marked with a distinct median furrow, from the posterior end of which extends outward over each half to the sides a shallow oval impression in front of the posterior margin.

Anterior spiracle moderate, a little elongate subvertically, the second similarly shaped and but little smaller; others circular, very gradually decreasing in size caudally.

Last ventral plate very wide; sides convexly rounded, strongly converging caudally.

Last pleuræ much enlarged; pores serially arranged along and beneath the last ventral plate.

Anterior pair of legs distinctly shorter and more slender, the legs regularly increasing in size from the first to about the sixth pair.

Anal pair of legs scarcely shorter than the penult, a little more slender, armed with a claw.

Pairs of legs 71–75. Length 60–82 mm.; width of largest specimen 2.2 mm. Length of antennæ of largest specimen 4 mm.

Locality.—Pacific Grove and Palo Alto, California.

This large and handsome species cannot be the form described by Wood under the name *epileptica* from an individual captured near Puget's Sound. The latter species is apparently much more like *imperialis* Bröl., the type of which comes from near the same locality. According to the published descriptions and figures, these species agree with each other and differ from *rubelliana*, among other points, in having the prebasal plate covered and in the larger number of legs (81–83 pairs).